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1984 Technology transfer plan

# WILDLIFE AND FISH HABITAT RELATIONSHIPS

"WFHR"



United States Department of Agriculture

Forest Service

Washington Office



United States  
Department of  
Agriculture

Forest  
Service

MO:

Re: 1320 Technology Transfer  
2600 Wildlife  
(AP&D)

MAR 20 1984

Subject: Wildlife and Fish Habitat Relationships System TT Plan

To: Regional Foresters, Station Directors, and Area Director

Managing wildlife and fish habitats as a key element of multiple-use management on National Forest System lands is a high priority for the Forest Service. We need to put state-of-the-art knowledge and methods into operation at all organizational levels to meet the opportunities and challenges for wildlife and fish habitat management. The enclosed Technology Transfer Plan is one effort to accomplish this in as short a time as possible.

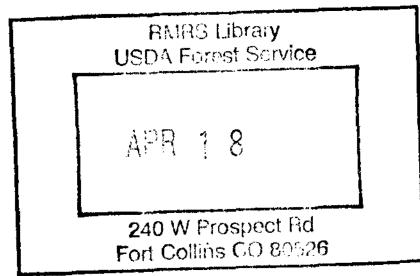
Wildlife and fish knowledge and analytical tools are a product of a number of research and development efforts Service-wide. This plan attempts, for the first time in the Forest Service, to bring critical focus to the application of knowledge from a variety of sources. It has been endorsed by the Technology Transfer Council as an overall guide for our Technology Transfer efforts over the next 5 years.

We ask you to examine your capability in FY 1984 to implement your share of this plan. Also, we suggest that you begin now to look at FY 1985 resources to accomplish the objectives of this plan. Regions and Stations should assume full leadership and budget responsibilities for implementing the plan during FY 1986 and beyond.

For: R. MAX PETERSON  
Chief

Enclosure

Limited Distribution



THIS PLAN WAS...

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#### THE MESSAGE

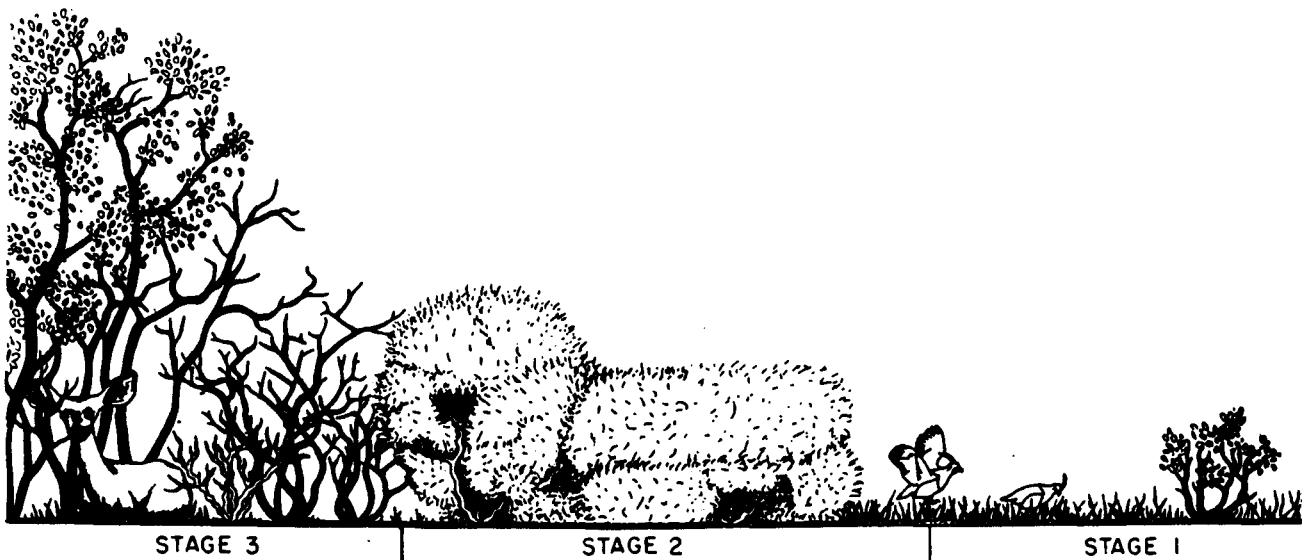
Among the mix of resources desired by the American people are a rich and productive wild flora and fauna. To meet this need the Forest Service manages the National Forests and Grasslands to 1) maintain viable populations of all native and desired non-native wildlife and fish, and 2) enhance habitat productivity for species that have high recreational use values. This is accomplished through a management system that stresses integrated resource planning, coordination between resource managers in treating lands and habitats, and adaptation to changing environments, new knowledge, and new resource values.



National Forest Land and Resource Management Plans and project environmental assessments are the principal tools used to improve the efficiency of multiple-resource management. They both require quantitative evaluations of habitat capabilities for wildlife and fish, and the consequences of management alternatives on their populations. These evaluations include 1) analysis of the level of protection provided for threatened or endangered species, and species that are sensitive to the intended course of management, and 2) economic assessments of the benefits to users from investments in habitat improvement and coordination with other resource developments.

Reliable planning requires the use of habitat classifications, inventories of resource conditions, and models that allow the prediction of future resource conditions under different land management scenarios. Effective implementation of the plans relies on guidelines and "tricks-of-the-trade" that have been learned from many years of experience.

The Wildlife and Fish Habitat Relationships System (WFHR) is designed to provide these specific tools and processes to more fully capitalize on wildlife and fish resource opportunities. The total system consists of Region and Station developed information, models, and procedures for habitat evaluation and management. It is, in the truest sense, the packaging of knowledge from diffuse research efforts into useful management products.



Application of the WFHR models and resource coordination procedures can increase the effectiveness of field and planning biologist's time, and help identify significant opportunities for producing more resources from a finite land base. For this to happen we must improve the process of transferring the new tools and methods to field users.

The focus of the WFHR Technology Transfer plan is on a general resource coordination process, i.e., principles for objective-driven habitat management, and methods for quantitative evaluation of management opportunities and tradeoffs for wildlife and fish. Technology transfer will be accomplished through Regional programs to implement Forest Service Handbook 2609.14 (under development by the Wildlife and Fishery Ecology Unit at Fort Collins, Colorado). The transfer media will include: display boards, slide-tapes or videos, demonstration areas, and hands-on case example workshops.

Focus of the TT Plan is on:

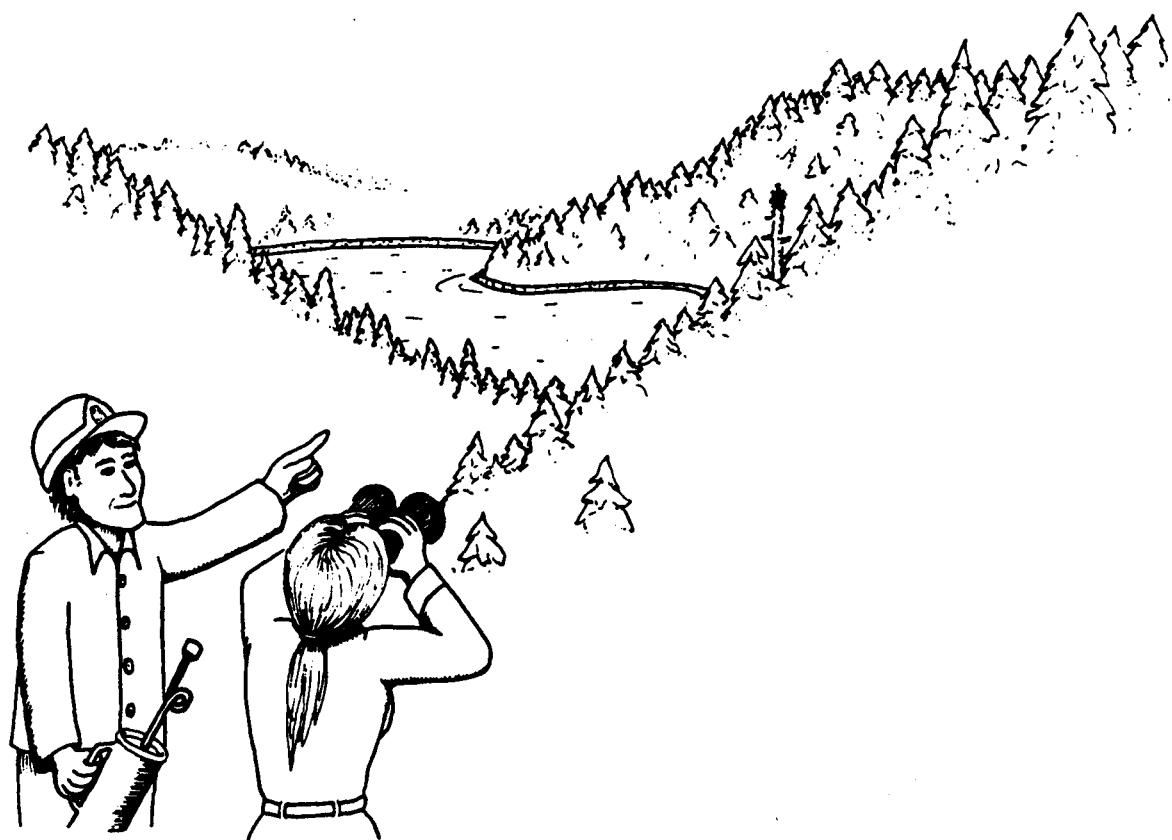
1. A resource coordination process that stresses a bias for action in integrating wildlife and fish with multiple-use management.
2. Interregional coordination on the development and application of:
  - a. Use of the management indicator species concept,
  - b. Cumulative effects analysis of habitat capability over space and time,
  - c. Risk analysis for population viability,
  - d. Analysis of animal community diversity,
  - e. Systems for monitoring wildlife and fish resources,
  - f. Computer methods for processing habitat and species data, and
  - g. Integration of habitat and species data into multi-resource inventories.

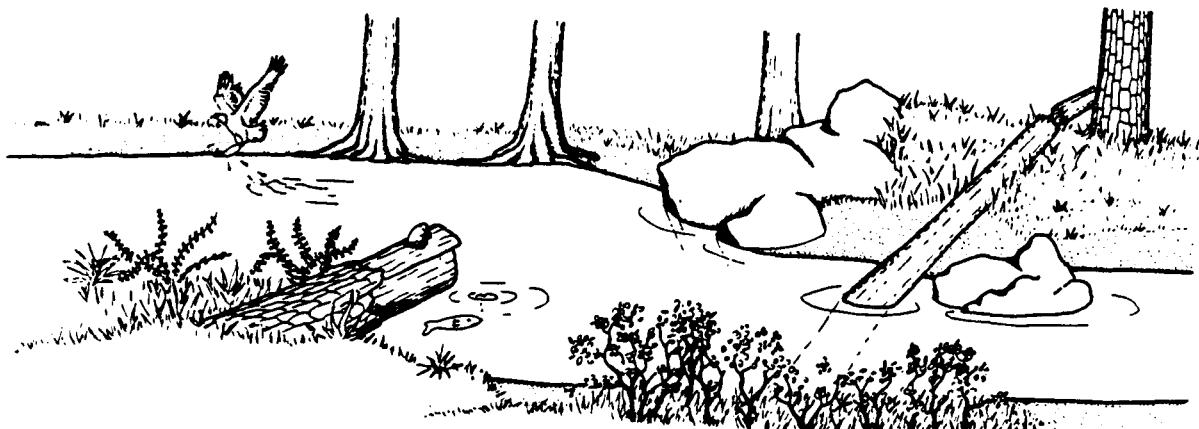


### THE AUDIENCE

The primary audience includes 1) Forest Supervisors, District Rangers, and Forest level staff for awareness of the WFHR System, its goals, tools, and uses, and 2) District and Forest level biologists, range conservationists, foresters, hydrologists and other resource specialists for expertise in use of WFHR tools and procedures.

The secondary audience includes interested cooperators, e.g., University, other State and Federal, and conservation group personnel, for awareness of the system and how the Forest Service is developing and using it.





### THE OBJECTIVES

Objectives of the TT Plan are to:

- 1) Inform all key line and staff in the Forest Service and interested non-Forest Service parties about the existence, intent, and example uses of the Wildlife and Fish Habitat Relationships System in multiple-use sustained yield forest and rangeland management,
- 2) Capitalize on existing Regional and Forest WFHR products in transferring to field users the knowledge and procedures needed to meet new planning requirements and increase overall management efficiency, and
- 3) Educate potential users in the full capabilities and correct application of WFHR System tools and procedures.

### THE TECHNOLOGY TRANSFER TEAM

The Technology Transfer Team is the WFHR Steering Committee. It is composed of the Regional coordinators for development and application of WFHR tools and procedures. The function of the team is to jointly develop FSH 2609.14, develop WFHR tools and methods, develop transfer media, and conduct training on WFHR System uses.

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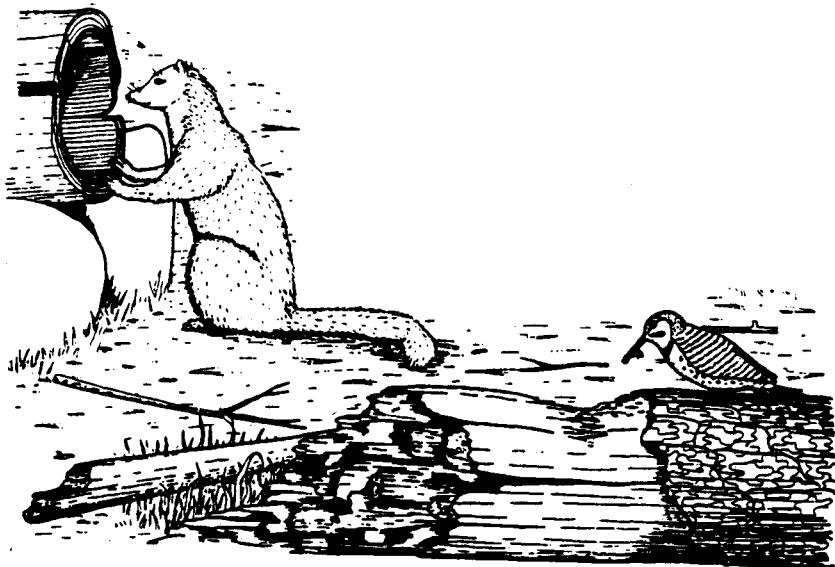
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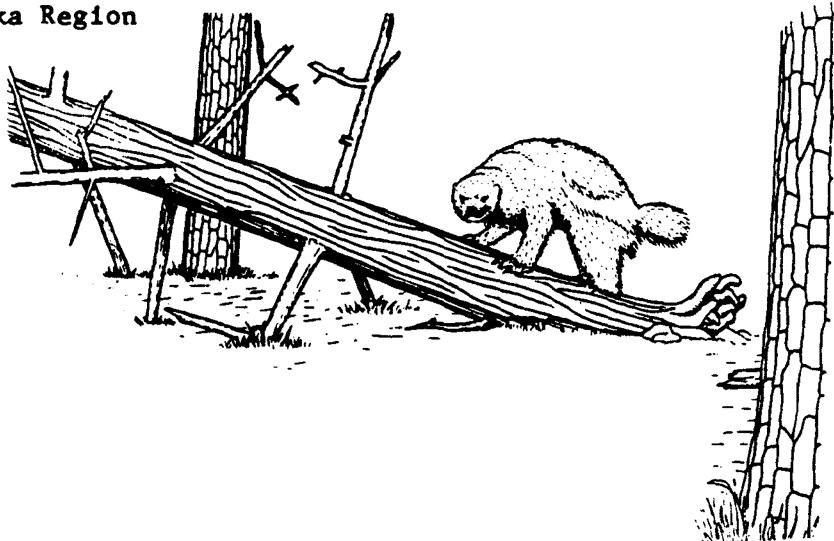
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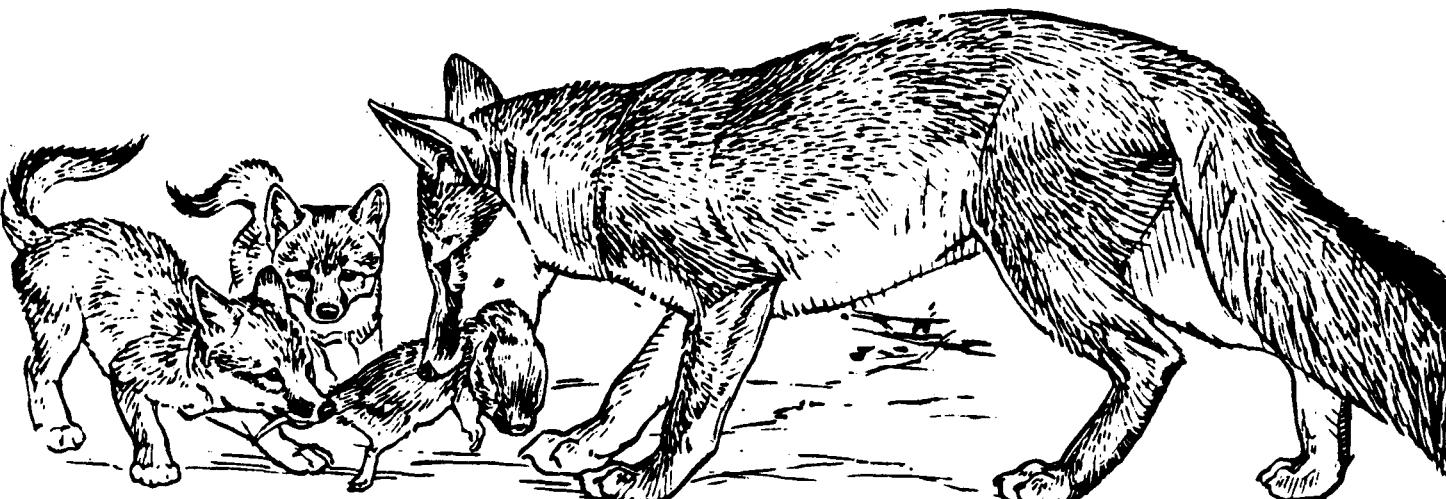
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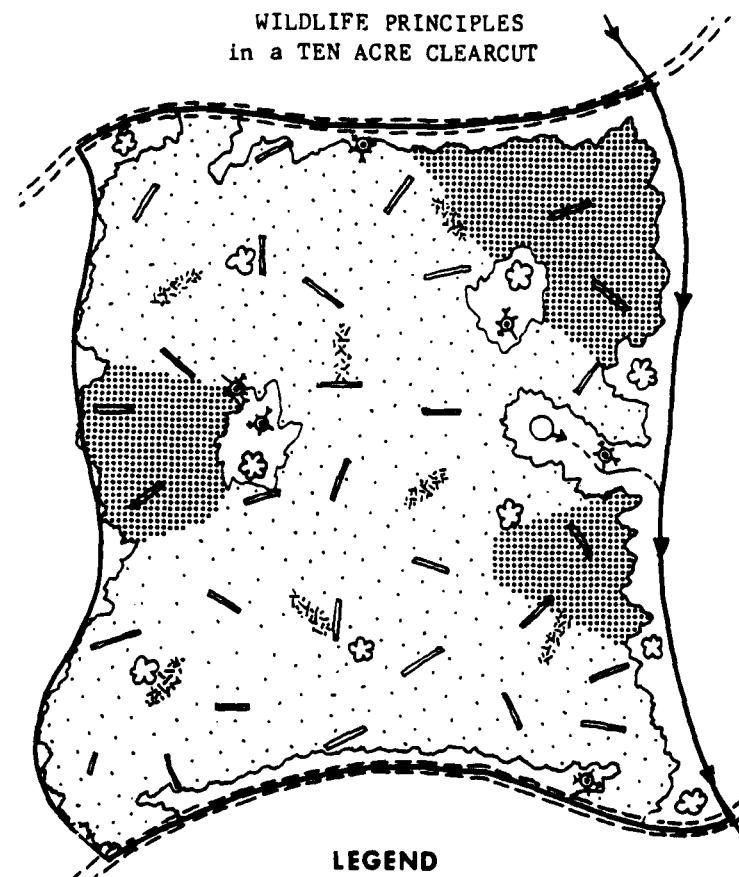
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#### LEGEND

- |      |             |           |                            |
|------|-------------|-----------|----------------------------|
| XXXX | Slash Piles | .....     | Planted Trees              |
| —    | Downed Logs | — — —     | Roads                      |
| ○ →  | Springs     | →         | Streams                    |
| ★    | Snags       | —         | Islands                    |
| ❖    | Oaks        | ■ ■ ■ ■ ■ | Seeded grass<br>and forbes |

#### PROJECT MANAGEMENT

##### WASHINGTON OFFICE DIRECTION:

Direction is given by the Washington Office Wildlife and Fisheries Staff Director, with coordination from Forest Environment Research, State and Private Forestry, RPA, and other National Forest System resource staffs. Hal Salwasser, in the Wildlife and Fish Ecology Unit at Fort Collins, Colorado, is the National Coordinator for the WFHR System.

COOPERATORS:

Other Federal agencies and several universities are involved in WFHR System developments and applications. Close contact with them is maintained by the Wildlife and Fish Ecology Unit to capitalize on common needs and products.

Principle cooperators at this time include:

USDI Fish and Wildlife Service, WELUT, Fort Collins, Colorado  
USDI Bureau of Land Management, Denver Service Center  
USDA Soil Conservation Service, Fort Collins  
DOD Army Corps of Engineers, Waterways Experiment Station  
University of California, Berkeley  
Colorado State University, Ft. Collins  
Oregon State University, Corvallis

TRANSFER AGENTS:

Transfer agents will be the personnel developing products and training users.

Regional Biologists  
Forest Biologists  
Research Biologists  
Selected District Biologists

TARGET DATE FOR TT PLAN COMPLETION:

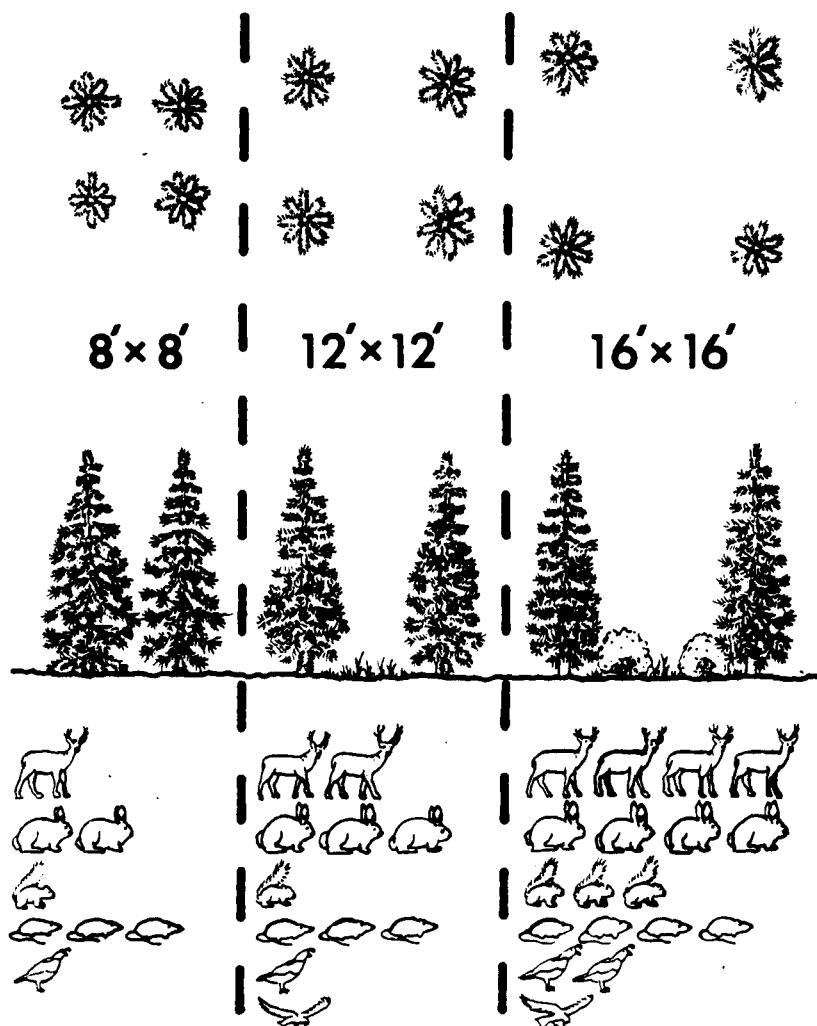
September 1985.



TRANSFER MEDIA

1. Chief's announcement in the Friday Newsletter: Completed September 1983.
2. WFHR Direction in FSM 2600, 2620, and 2660: Completed Fall 1983.
3. FSH 2609.14 detailing the goals, concepts, product standards, applications examples, and other materials useful in guiding Regional WFHR developments (for current status see FSH 2609.14 draft; final directive 9/85).
4. Brochure and display board on WFHR System: Display board completed for use after December 1, 1983; brochure to be done by March 1984.
5. Slide-tape show on WFHR for use in Regional and Forest training sessions; draft to Advisory Team by March 1984, to be completed by June 1984
6. Demonstration areas on WFHR applications in each Region for use in "hands-on" training: All Regions set up by September 1984.
7. Workshops and training on new management concepts: 1) Viable population risk analysis during FY 84; 2) Cumulative effects analysis during FY 85; 3) Monitoring during FY 85; 4) Others as needed.
8. Slide-tapes on WFHR methods and special analysis procedures: 1) Habitat classifications 9/84; 2) Habitat capability modeling 12/84; 3) Principles for resource coordination 6/84; 4) A coordination procedure for habitat planning and evaluation 7/84; 5) Diversity analysis 8/84; 6) Management indicator species/guild/ habitat analysis 8/84; 7) Viable population risk analysis 4/84; 8) Monitoring systems 7/85.
9. WFHR Newsletter on tools and methods developed by the Regions and Stations: triannually beginning Spring 1984.





### EVALUATION

**Stage 1.** An assessment of weaknesses in WFHR implementation at the 1982 WFHR Steering Committee meeting lead to the TT plan.

**Stage 2.** Regional WFHR Coordinators will assess their own implementation needs by August 1984, in preparation for the FY 84 Coordinators meeting.

**Stage 3.** At end of this plan, September 1985, the Advisory Group will assess changes in awareness and use of WFHR system tools by the intended audiences. At that time they will advise the Director for Wildlife and Fisheries of the need for any additional TT efforts on WFHR.

REPORTS

Stage 1. Report is this plan.

Stage 2. A report will be made to the Advisory Group in August 1984.

Stage 3. The Advisory Group and the WFHR System Coordinator will submit a final report in December 1985.

BUDGET

FY 84 WLF funding is \$40,000 to support media development, applications, and limited model verification. Included at this time are: 1) workshops on viable populations risk analysis, 2) FHR pilot test in R-9, 3) the WFHR display board, and 4) application of decision theory to species monitoring (Region to be decided).



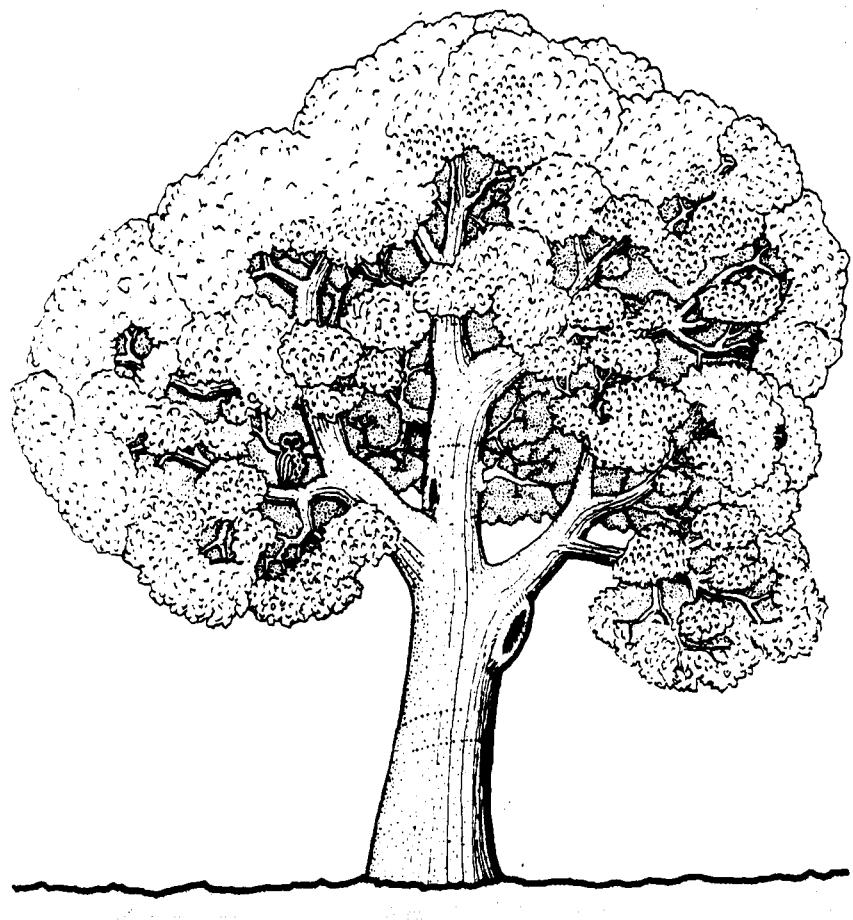
The following projects and proposed budget would speed-up WFHR implementation and fully decentralize WFHR System development to the Region and Forest level by the end of FY 85. Management Indicator models and guidelines will be regionalized according to Dr. Robert Bailey's Ecoregions to gain efficiencies in model development and application. Only models and procedures of interregional significance are identified in this plan. Regions are expected to fund their own development of Regional demonstration areas, Management Indicator models, refinements in their data bases, and local training.



In developing this list it is assumed that the developmental role of the Washington Office Wildlife and Fish Ecology Unit (WLFE) will terminate at the end of FY 85. It is therefore expected that technical leadership for all parts of WFHR Systems will reside in each Region at that time. By this it is meant that each Region will have under development or implementation: 1) a wildlife and fish information system as described in FSH 2609.14 Chapters 1, 2, and 4; 2) a resource coordination process that includes a quantitative, cumulative effects habitat analysis model as described in FSH 2609.14 Chapters 3 and 5; and 3) a habitat management guidelines system as described in FSH 2609.14 Chapter 5

It is assumed in this plan that if the Regions know how to build and use the WFHR tools, and if they are found to be useful in improving management effectiveness, the Regions will provide for the WFHR System through their own budgeting process after FY 85. The task of this plan is to develop and document prototypes of the WFHR System tools and methods in order to transfer knowledge of the full system to the Regions.

There are three parts to the TT strategy; WLFE Unit and WFHR Coordinators will 1) define the full system and describe its parts in FSH 2609.14, 2) use this plan to get "lead" Regions to document operational WFHR parts for Service-wide use in FY 84, and 3) use this plan to support selected Regions on new WFHR developments in FY 84 and their documentation in FY 85. Only the highest priority WFHR parts are identified for work in this plan. Second priority parts will rely on FSH 2609.14 and the Regional Coordinators for implementation.



TECHNOLOGY TRANSFER PLAN IMPLEMENTATION PRIORITIES

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WFHR Subsystem Subsystem Part	To Be Accomplished By TT Plan	FHS 2609.14
<b>Information Subsystem</b>		
Species Classifications		X
Habitat Classifications		
Wildlife		X
Fisheries	X	
Species Distribution Maps or Codes		X
Life History-Habitat Needs Notes		X
Species and Habitat Inventories		X
<b>Analysis Subsystem</b>		
Resource Coordination Process	X	
Dynamic Cumulative Effects Model	X	
Habitat Capability Model Building	X	
Community Assessment Model (Diversity)	X	
Monitoring Systems	X	
Viable Population Risk Analysis	X	
Tie to Economic Analysis	X	
<b>Habitat Management Guidelines Subsystem</b>		
Management Indicator Coord. Guides		X
Best Management Practices		X

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From these priorities a series of examples will be developed and documented through displays, demonstration areas, brochures, slide-tapes, and chapters in FSH 2609.14. The examples are assigned as follows, assuming a budget to support completion.



WFHR TT IMPLEMENTATION PROJECTS

Project	Unit	Action	Est. Cost
The Resource Coord. Process	WLFE	Slide-tape, FSH chapt.	\$5K
Cumulative Effects Analysis Models (Carman Springs MTNF)	WLFE	FSH chapt., Demo	
(Aspen-WL Routt NF)	R9/NC	Slide-tape, display	\$5K
(Fish-Black Hills NF)	R2/WLFE	Slide-tape, display	\$5K
	R2/WLFE	Slide-tape, display	\$5K
How to build MIS Models	WLFE	FSH chapt., Demo	
Wildlife PATREC Model	R9/NC	Slide-tape	\$3K
Wildlife Habitat Cap. Model	R1	Slide-tape	\$3K
Wildlife Habitat Cap. Model	R5	Slide-tape	\$3K
Fish Habitat Cap. Model	R1/WLFE	Slide-tape	\$3K
Fish Habitat Classification	WLFE	Slide-tape, FSH chapt.	\$3K
Fish Habitat Inventory	PNW/INT	Slide-tape, FSH chapt.	\$5K
How to do a Wildl. Div. Analysis	R5/WLFE	Slide-tape, FSH chapt.	\$5K
How to Monitor Wildl. Mgmt. Indic.	R8/WLFE	Slide-tape, FSH chapt.	\$5K
How to Monitor Wildl. Community	R5	Slide-tape, FSH chapt.	\$5K
How to Monitor Fish Mgmt. Indic.	INT	Slide-tape, FSH chapt.	\$5K
Viable Population Risk Analysis	R6/WLFE	Slide-tape, FSH chapt.	\$3K
Use of Decision Theory Model on Endangered Species	WLFE	Slide-tape, FSH chapt	\$15K
Wildlife MIS Models	All Reg.	Slide-tape, FSH Chapt.	\$8K ea.
Fish MIS Models	All Reg.	Slide-tape, FSH chapt.	\$8K ea.
<b>Total of all projects</b>			<b>\$222K</b>

These projects are listed in priority as of 5/1/84. Assigned units are the Stations or Regions that have pioneered in development and implementation of a key part of the WFHR System. The cost column is an estimate of dollars needed to accomplish the identified actions. Each Region should develop TT media on an example Management Indicator Species model for wildlife and fish for use in subsequent training sessions.